

IMPORTANT SAFETY INSTRUCTIONS

This manual contains important safety instructions that must be followed to avoid fire, property damage, personal injury, or death. The warnings, precautions, and instructions mentioned in this manual cannot cover all possible conditions and situations that may occur. The operator must understand that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator. Failure to heed these warnings may affect the warranty.


CAUTION! TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS:

- Plug the UPS into a 2-pole, 3-wire grounded receptacle (wall outlet). Make sure the wall branch outlet is protected by a fuse or circuit breaker and does not service equipment with large electrical demands (e.g., air conditioner, refrigerator, copier, etc.). Do not use if the supply cord or plug is damaged. Always unplug the power cord by the plug, never by tugging at the cable. Do not use with extension cords, an accessory surge protector, into its own output, or "daisy-chain" in serial fashion with other power strips, UPS, surge protectors, or extension cords.
- Do not remove the cover except to service the battery. When replacing the battery, use the same number and type of battery. No user serviceable parts inside except for battery. Servicing of user replaceable batteries should be performed or supervised by personnel knowledgeable about batteries and required precautions. Do not attempt to add external batteries to the UPS.
- Although the UPS may be unplugged from the utility power, hazardous voltage may still be present through the battery. Always turn off the unit and unplug it from the AC power source before servicing the battery.
- Place the UPS at least 20 cm (7.8 in.) away from other objects to give it adequate airflow around the unit. Do not cover the UPS' cooling vents and avoid exposing the unit to direct sunlight or installing the unit near heat emitting appliances such as space heaters or furnaces. Do not allow the UPS to be exposed to moisture, rain excessive heat, or direct sunlight. Do not allow liquids or any foreign object to enter the UPS. Do not place beverages or any other liquid-containing vessels (i.e., aquariums) on or near the unit. Condensation from liquids can cause the unit to short circuit.
- Install in a temperature and humidity controlled indoor area free of conductive contaminants. Keep on a flat stable surface. If wall mounting, install in a vertical position to the side of a wall, desk, table, or other stable surface to avoid overheating.
- In the event of an emergency, press the OFF button and disconnect the power cord from the AC power.
- Do not dispose of batteries in a fire, the battery may explode. Do not open or mutilate batteries. Released material is harmful to the skin and eyes and may be toxic.
- Do not attach non-computer-related items, such as medical, life-support, or nuclear equipment, microwave ovens, or vacuum cleaners to UPS. Do not use in any circumstance that would affect operation or safety of any life support equipment or with any medical applications or patient care.
- Always adhere to all local and national electrical codes.
- Risk of suffocation, choking, or electric shock. Do not allow people with reduced sensory, physical, or mental capacity, children, or pets play with the plastic bag, packaging material, or battery that was included with your unit.
- Do not use the UPS on any transportation such as airplanes or ships. Shocks or vibrations caused during transit and the damp environment can cause the unit to short out.
- Do not use the UPS other than its intended use.
- Use tools with insulated handles and wear rubber gloves and boots when servicing. Do not handle any metallic connector before power has been disconnected when servicing. Always remove metallic objects such as wristwatches and jewelry such as rings when replacing the battery.
- Recycle used batteries in accordance with local ordinances or regulations. Do not dispose battery with regular household waste; batteries are considered hazardous waste. Remove the battery from the UPS before disposal. Check your local recycling center or waste disposal center to locate your nearest recycling location.

INSTALLING YOUR UPS SYSTEM
OVERVIEW

Thank you for purchasing the Micro UPS Series from Maruson. The Micro UPS provides battery backup during power outages, surge protection, and protection from power sags. The built-in automatic voltage regulation (AVR) function adjusts minor voltage fluctuations instead of switching over to battery mode for the battery backed outlets. In the event of a power outage, the UPS will provide temporary power to connected equipment plugged into the Battery-Backed Outlets.

UNPACKING

Inspect the package contents upon receipt. Notify your local dealer if there is any damage. The box should contain the following: (1) UPS and (1) User. Select models will include (1) Power Cord and/or (1) USB Communication Cable. Power management software for select models can be downloaded online at www.MarusonUSA.com.

USE GUIDE

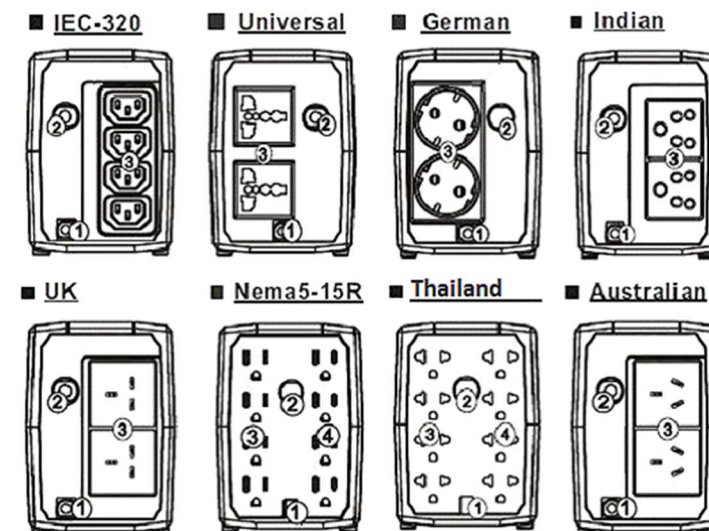
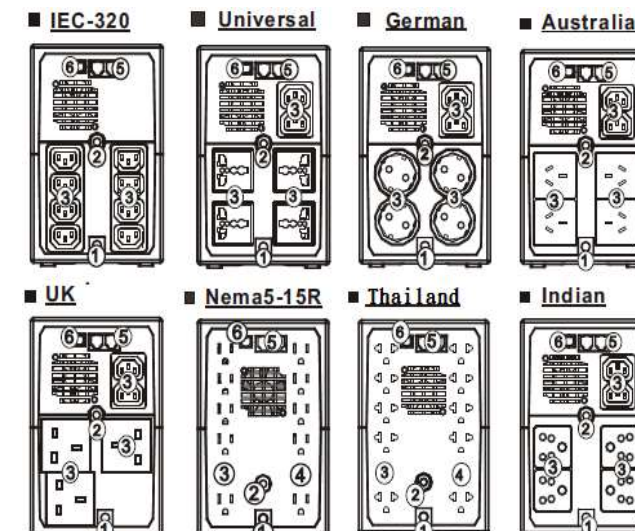
- Make sure that the total Volt-Amp (VA) requirements of your computer, monitor, and peripheral equipment does not exceed the rated capacity. There are many factors that can affect the amount of power that your computer system will require. For optimal system performance keep the connected load below 80% of the UPS's rated capacity.
- Ensure that the equipment plugged into the battery power-supplied outlets does not exceed the UPS unit's rated capacity. If rated unit capacities are exceeded, an overload condition may occur and cause the UPS unit to shut down and/or the circuit breaker to trip.
- Your new UPS may be used immediately upon receipt. However, recharging the battery for at least eight (8) hours when first receiving the new unit is recommended to ensure that the battery's maximum charge capacity is achieved. Charge loss may have occurred during shipping and storage. To recharge the battery, simply leave the unit plugged into an AC outlet. Your UPS is equipped with an auto-charge feature. When the UPS is plugged into an AC outlet, the battery will automatically recharge.
- With the UPS unit off and unplugged, connect the computer, monitor, and any equipment into the battery power supplied outlets. **Never plug a laser printer, copier, space heater, vacuum, paper shredder or other large electrical device into the battery power supplied outlets.** The power demands of these devices will overload and possibly damage the unit or connected device, which will not be covered under warranty.
- To maintain optimal battery charge, leave the UPS plugged into an AC outlet at all times. To store your UPS for an extended period, fully charge the battery before storing. Recharge the battery every three months to ensure battery life.
- Battery life and runtime will vary based on battery age, maintenance, altitude, ambient temperatures, power quality of AC power, and frequency of shorts to the UPS.

SUPPORT

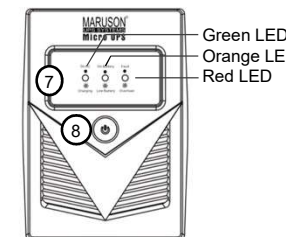
If the unit requires service or you are having difficulty using the unit, follow these steps:

1. Review the Troubleshooting section of the manual to see if that resolves the issue.
2. Contact your local authorized distributor for support. If you are not able to get ahold of your local authorized distributor, contact Maruson Technical Support at +1-800-627-8766 or support@marusonusa.com. We're available Monday through Friday, 9 AM to 5 PM (Pacific Time). We will need your model number, serial number, and description of issue and connected equipment for support.
 - a. If we are unable to resolve the issue over phone or email, the technician will issue a Return Authorization Number (RMA #) to ship the unit back for repair.
 - b. If the unit is under warranty, the repairs are free.
3. Pack the unit in the original packaging to avoid damage during transit. Damage sustained during transit and lost packages on the way to or from Maruson are not covered under warranty. The customer is responsible for all shipping costs (including duties and taxes if outside US) to ship to and from Maruson.

4. The RMA number must be marked on the outer packaging and return the unit by insured, pre-paid carrier to the address provided by the technician. Packages without an RMA number on the outside package and collect shipments will be refused.

FEATURES
500VA / 650VA / 850VA / 1000VA Models

1250VA / 1650VA / 2200VA Models


1. **Input Power Cord:** Utility power cord.
2. **Input Circuit Breaker:** The circuit breaker provides overload and fault protection. In the event of an overload and the circuit breaker trips, turn off the UPS then unplug at least one piece of equipment from the UPS outlet. Wait 10 seconds before depressing the circuit breaker and turn the UPS on again.
3. **Battery-Backed Outlets with Voltage Regulation and Surge Protection:** These outlets provide battery power, automatic voltage regulation, and surge protection. In the event of a major power disturbance, these outlets will continue supplying power to connected equipment until utility power returns or battery is depleted. The automatic voltage regulation feature adjusts minor voltage fluctuations instead of switching over to battery power.
4. **Surge Protected Outlets:** These outlets provide surge protection to connected equipment.
5. **Phone/Fax/Network Ports (RJ-11/45 Combo Ports):** * Suppresses surges in phone, fax, and network cables. Connect the phone or network cable from the phone or network service to the "IN" port. Connect a second cable from the "OUT" port from the UPS to your phone, fax, or network equipment. (For 1250VA / 1650VA / 2200VA models only)
6. **USB Communication Port:** * This port allows connection and communication between the USB port on your computer and UPS unit. Use the included USB cable to connect your UPS and computer and download the software online if you want to use the power management feature. (For "S" models only)
7. **LED Status Indicators:** The LEDs and audible alerts will provide real-time information on the UPS status. See Status Indicators section for additional information.
8. **Power Button:** Press the button for to turn the UPS on or off. You will hear 1 short beep when you turn the UPS on or off. This UPS also has cold start function allowing the UPS to turn on even if there is no utility power as long as there is sufficient battery power stored.


STATUS INDICATORS

UPS Status	Green LED	Orange LED	Red LED	Audible Alert	Status
Line Mode	Solid green	Off	Off	Off	UPS normal and battery fully charged
	Flashes every 8 seconds	Off	Off	Off	Battery charged at 70% to 90% capacity
	Flashes every 4 seconds	Off	Off	Off	Battery charged at 50% to 70% capacity
	Flashes every 2 seconds	Off	Off	Off	Battery charged at 30% to 50% capacity
	Flashes every second	Off	Off	Off	Battery charged at 0% to 30% capacity
Battery Mode	Solid green	Off	Flashes red	Continuous beeping	UPS overload in Line Mode. UPS will shut down at 120% overload Turn the UPS off and unplug at least one piece of equipment before turning the UPS on again. Continue unplugging one piece of equipment at a time until the UPS stops beeping.
	Off	Two flashes every 4 seconds	Off	Two beeps every 8 seconds up to 10 times	UPS is in normal Battery Mode. Load and battery conditions are normal. The audible alert will mute after 10 sets of beeps.
	Off	Off	Off	Continuous beeping	UPS overload in Battery Mode. UPS will shut down at 120% overload Turn the UPS off and unplug at least one piece of equipment before turning the UPS on again. Continue unplugging one piece of equipment at a time until the UPS stops beeping.
	Off	Constant flashes every two seconds	Off	Rapid beeping	Battery overtemperature
	Off	Two flashes every 2 seconds, up to 30 times	Off	Two beeps every 2 seconds, up to 30 times	UPS short-circuited
Fault	Off	Off	Solid red	Continuous beeping	Fault detected. Contact support at support@marusonusa.com if this issue does not go away.
	Off	Off	Off	Off	UPS is off
Off Mode	Flashes every 2 seconds	Off	Off	Off	AC normal and battery is charging

TECHNICAL SPECIFICATIONS

Model	MIC-500A	MIC-650A	MIC-850A	MIC-1000A	MIC-1250A(S)	MIC-1650AS	MIC-2200AS
Capacity	500VA / 280W	650VA / 360W	850VA / 480W	1000VA / 550W	1250VA / 720W	1650VA / 990W	2200VA / 1320W
Nominal Voltage	110 / 115 / 120Vac or 220 / 230 / 240Vac						
Input Voltage Range	110 / 115 / 120Vac models: 80 – 145 Vac; or 220 / 230 / 240Vac models: 154 – 280 Vac						
Frequency Range	50 / 60 Hz (auto sensing)						
Output Voltage	110 / 115 / 120Vac or 220 / 230 / 240Vac						
Regulation Steps	2-Steps Up and 1-Step Down Automatic Voltage Regulation						
On-Battery Output Waveform	Simulated Sine Wave						
On-Battery Output Voltage	110 / 115 / 120Vac or 220 / 230 / 240Vac +/- 10%						
On Battery Output Frequency	50 / 60 Hz +/- 1Hz						
Battery Type	Sealed Maintenance-Free Lead Acid Battery						
Battery Size	12V / 4.5Ah x 1	12V / 7Ah x 1	12V / 7.2Ah x 1	12V / 9Ah x 1	12V / 7.2Ah x 2	12V / 9Ah x 2	12V / 9Ah x 2
Battery Charging Voltage	13.7Vdc +/- 2%				27.4Vdc +/- 2%		
Battery Recharge Time	Typically, < 5 hours to 90% Capacity						
Transfer Time	2 – 6 ms (typical)						
Full Protection	Discharge, Overcharge, and Overload Protection						
EMI Filtering	Yes						
Surge Protection	175 Joules						
USB Communication Port*	No			Yes*			
Phone / Fax / Network Surge Protection*	No			RJ-11 / 45 (1-in, 1-out)			
Power Management Software*	No			Yes*, Windows® 10 / 8 / 7 / 2008 / 2003 / 2000, Server® 2012 R2 / 2008 R2, Linux®, Unix, Mac®			
Auto-Charger	Yes						
Auto-Restart	Yes						
Operating Temperature	0°C up to 40°C / 32 up to 104 °F						
Operating Relative Humidity	0 to 90% non-Condensing						
Noise Level	Less Than 40 dB						
Dimensions (DWH)	315.5 x 100 x 141 mm / 12.4 x 3.9 x 5.6 in			343 x 135 x 208 mm / 13.5 x 5.3 x 8.2 in			
Product Weight	3,5 kg / 7,7 lb	4,3 kg / 9.5 lb	5,2 kg / 11.5 lb	5,7 kg / 12.6 lb	8,1 kg / 17.9 lb	9,7 kg / 21.4 lb	11,4 kg / 25.1 lb

*Available for "S" models only.

NOTE: Check the product label for your unit's specifications.

TROUBLESHOOTING

Problem	Possible Cause	Solution
AC power is available, but the outlets stopped providing power to connected equipment.	Circuit breaker tripped due to an overload.	Turn the UPS off and unplug at least one piece of equipment. Reset the circuit breaker by depressing the red button. Turn the UPS on.
	Low battery or battery voltage less than 10V.	Allow the UPS to charge for at least 8 hours. The low battery may be due having recently experienced a power disturbance that drained the battery(ies) or the battery(ies) may need to be replaced with new ones.
	Control board failure.	Control board needs to be replaced. Contact or your local authorized retailer for fastest support. You can also contact us at support@marusonusa.com
The UPS is always in Battery Mode.	AC power voltage is beyond accepted range.	If the UPS detects the incoming AC power to be below or above the accepted voltage range, the UPS will not power on to protect connected equipment. Please wait a few minutes before turning on the UPS.
	Power cord is loose.	Check the power input connection at the mains and input connection on the UPS to power supply cord.
	Circuit breaker tripped.	Turn the UPS off. Reset the circuit breaker by depressing the red button. Turn the UPS on.
The battery does not perform to the expected runtime.	Control board failure.	Control board needs to be replaced. Contact or your local authorized retailer for fastest support. You can also contact us at support@marusonusa.com
	Battery is not fully charged or has not recharge fully since last time battery backup mode.	Allow the UPS to recharge fully by leaving the UPS plugged in.
	The UPS is overloaded.	Remove at least one non-critical equipment. Keep removing equipment until the UPS is no longer overloaded.
	End of battery service life.	Replace battery or contact support@marusonusa.com
UPS beeps continuously.	Battery defect.	If the battery is less than one year old, the shorter runtime may be due to operating in high temperatures or improper operation of the battery. Replace the battery with the same type of battery. If replacing the battery does not resolve the issue, contact your local authorized retailer. You may also contact us at support@marusonusa.com
	UPS is overloaded.	Turn the UPS off and unplug at least one piece of equipment before turning the UPS back on.

LIMITED WARRANTY

The 500VA / 650VA / 850VA / 1000VA / 1250VA / 1650VA / 2200VA Micro UPS (individually and collectively, the "Product") includes limited warranties Maruson Technology Corporation (referred to herein as "Maruson") offers for customers who register their product within fifteen (15) days of the invoice date. These limited warranties are only for the original end-user ("Original Purchaser"). Please retain a copy of your receipt as proof of purchase. All Warranty claims must be made within ten (10) days of occurrence. If you need to file a claim, contact your local authorized dealer first or fill out the RMA form online from the Maruson website. Terms and conditions apply. Visit our website for details.

Maruson warrants the Original Purchaser of this Product that the product is free from defects in materials and workmanship under normal use and service for which the product was designed for a period of three (3) years for Limited Product and two (2) years for Limited Battery Warranty. The limited warranties start date is based on the date of purchase. If, in the opinion of Maruson, the UPS or battery is defective and defective within the scope of this warranty, Maruson's sole obligation will be to repair or replace the defective UPS or battery. No salesperson, employee, or agent of Maruson is authorized to add to or vary the terms of the warranties. By using the Product, you agree to the terms of the Limited Warranty. The duration of warranty coverage does not pause, restart, or extend if the Product is with Maruson or any of its dealers for evaluation, servicing, repairs, or if a replacement part or unit is provided. If any payment is required as part of a service, Maruson's obligations under this warranty are expressly conditioned upon receipt by customer of all payments due to it (including interest charges, if any). During such time as Maruson has not received payment of any amount due to it for the Product, in accordance to the contract terms under which the Product is sold, Maruson shall have no obligation under this warranty.

WHAT IS NOT COVERED

Maruson shall not be liable for costs, damages, or repairs incurred as a result of, due to, or from:

- Warranty for purchase of unit from unauthorized dealers, second-hand units, units that were transferred, or gray market units.
- Improper usage, operation, handling, tampering, misuse, abuse, lack of maintenance, and/or use of the UPS or connected equipment not in accordance with the User Manual, including damage as a result of use not in accordance with the rating plate or altering the serial number or removing the ratings label.
- Damage from fire, flood, wind, rain, rising water, theft, vandalism, lightning, or other acts of God, leakage or breakage of plumbing, harsh chemical action, intentional misconduct on the part of the consumer, accident, dropping the device, abuse or other abnormal conditions, or unauthorized modifications.
- Normal wear and tear, including normal wearing parts such as the power cord (or where external damage or abuse was diagnosed) and reduction of battery discharge time due to battery age or use.
- Damage from lightning or power transients. Damage from causes other than AC power line transients, spikes, or surges on properly installed, grounded and code-compliant 120Vac power lines; transient surges or spikes on standard telephone land lines, PBX telephone equipment, or base 10T ethernet lines, when properly installed
- Economic loss or special, indirect, or consequential including without limitations; loss or damage to data, records, or software or the restoration of data or records, or the restoration of software, whether or not on account of product failure.
- Packaging and shipping costs to ship to Maruson for warranty service, or any miscellaneous costs (e.g., tax, duty, tariff, shipping insurance, etc.).

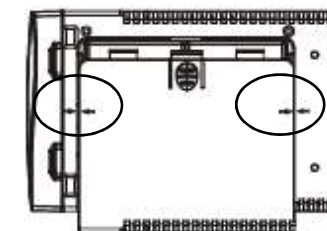
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This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damage, so the limitations stated may not apply to you. The English version of this warranty and policy will always prevail if there are inconsistencies with a translated version.

BATTERY REPLACEMENT

Carefully read the cautions and warnings in this manual before attempting to replace the batteries; not doing so can cause serious injury, shock, or fire. **Failure to connect to the correct terminals may cause damage to the UPS, battery(ies), or other damages.** It is normal for small sparks to be seen when the battery cable is connected the battery terminal. Recycle spent batteries. Always use new batteries for replacement, do not use recycled batteries.

- Turn off and unplug all connected equipment from the UPS. Turn off the UPS and unplug the unit from the AC power source.
- Remove the two screws under the UPS' front panel with a Phillips screwdriver.
- Carefully remove the front panel from the UPS by lifting the bottom of the front panel outward from the UPS and upward.
- Remove the plastic mount in front of the battery(ies) by sliding it up.
- 500VA / 650VA / 850VA / 1000VA Models:** Remove the spent battery from the UPS. Disconnect the **black (negative, -)** wire from the battery terminal, then disconnect the **red (positive, +)** wire. When replacing with a new battery, connect the **red (positive, +)** wire to the **positive (+)** terminal first, then connect the **black (negative, -)** wire to the **negative (-)** battery terminal.
NOTE: This battery replacement feature is optional for 500-1000VA models.

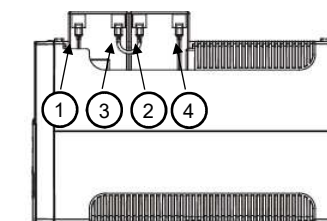


Align the arrows on the battery compartment cover with the UPS to remove the cover.

1250-2200VA Wires

Removal:

- Remove the **black (-)** wire from first battery terminal.
- Remove the jumper wire on the negative terminal of the second battery.
- Remove the jumper wire from the positive terminal on the first battery.
- Remove the **red (+)** wire.
- Reverse the steps when installing new batteries.



- When replacing with new batteries, connect the wires in reverse. Connect the **red (positive, +)** wire to the **positive (+)** terminal on the second battery, then connect one end of the jumper wire to the **positive (+)** terminal on the first battery. Next, connect the other end of the jumper wire to the **negative (-)** terminal on the second battery. Finish up by connecting the **black (negative, -)** wire to the negative battery terminal of the first battery.

- Replace the battery compartment cover. Plug the UPS to a wall outlet to recharge the UPS battery for at least 6 hours before turning the UPS on for use.

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